UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF ENVIRONMENTAL CLEANUP

MEMORANDUM

DATE: August 23, 2016

SUBJECT: Draft Source Control Decision
BNSF Willbridge Rail Yard
ECSI #3395
July 20, 2016

FROM: Eva DeMaria, Remedial Project Manager

TO: Rob Hood, Project Manager
Oregon Department of Environmental Quality

Following are the United States Environmental Protection Agency's (EPA) comments on the July 20, 2016 Draft Source Control Decision (SCD) for the Burlington Northern Santa Fe (BNSF) Willbridge Rail Yard Site located at 5814 NW Doane Avenue, Portland, Oregon. The SCD was prepared by the Oregon Department of Environmental Quality (ODEQ) based on information presented in the Expanded Preliminary Assessment Report (XPA, AECOM, 2011[1]) and associated addendums. EPA's review of source control documents is limited to XPA Addendum 4. The Willbridge Rail Yard is located at River Mile 8.2 east (RM8.2E), approximately 2,000 feet from the riverbank. Stormwater discharges to the Willamette River via City of Portland Outfall 19.

Stormwater at the BNSF site is generated from a small area (0.1 acres) that includes an administrative office and paved parking area. Due to the inadequacy of the stormwater sampling at the site, the elevated levels of PAHs detected in catch basin CB-44 and the failure to describe best management practices at the site, EPA cannot concur with ODEQ's determination that BNSF has controlled upland sources of contamination from current and past operations such that contaminant transport pathways at the site do not pose a significant current or future threat to the Willamette River.

EPA's comments are presented in the following sections. Comments are separated as "Primary," which identify concerns that must be resolved to achieve the assessment's objective; "To Be Considered," which, if addressed or resolved, would reduce uncertainty, improve confidence in the document's conclusions, and/or best support the assessment's objectives; and "Matters of Style," which substantially or adversely affect the presentation or understanding of the technical information provided in the report.

[1] Integral Consulting Inc., Addendum 4 to the Expanded Preliminary Assessment and Source Control Evaluation, 2015 Stormwater Storm Drain Sampling Results, BNSF Willbridge Switching Yard, Portland Oregon. August 2015.

Primary Comments

1. Stormwater sampling consistent with the Portland Harbor Joint Source Control Strategy (JSCS) requirements was not conducted as recommended in previous EPA comments dated January 13, 2016. The 2015 stormwater sampling did not comply with the JSCS guidelines, and therefore, may not be sufficient for determining whether the stormwater pathway is a current or future contamination source to the Willamette River. Additional stormwater sampling is needed to adequately characterize stormwater discharges. Specifically:

    a. The JSCS guidance (Section D.2) states that a minimum of four storm events be sampled for screening purposes. Of these four stormwater sampling events, the JSCS recommends that two be representative of "first flush" conditions (i.e., within the first 30 minutes of stormwater discharge) and the other two events should be collected within the first three hours of stormwater discharge. As described in the SCD, the intent was to collect a first-flush sample, but due to access problems, the sampling did not occur until 30 hours into the event. In addition, based on the hydrograph in Figure 3 (Addendum 4 to the XPA) and the description of stormwater sampling in the text, it appears that stormwater sampling did not occur within the first three hours of stormwater discharge. Pollutant concentrations can vary significantly over the course of a stormwater runoff event, and the data collected may not be representative of typical stormwater discharge. The timing of first runoff and timing of sample collection should be documented in the report to evaluate the representativeness of first flush conditions, and to determine adherence to JSCS guidance to collect samples within the first three hours of discharge.

    b. The stormwater sampling conducted in November 2009 and November 2010 did not include analysis for polycyclic aromatic hydrocarbons (PAHs) and thus is not considered adequate for source control evaluation purposes.

    c. For more appropriate comparison to downstream water quality, stormwater samples should be collected from catch basin CB-44 while water is flowing, if possible (as opposed to sampling from pooled water). Additionally, a sufficient quantity of water should be collected to allow analysis of all analytes requested by ODEQ (total petroleum hydrocarbons (TPH) gasoline and diesel ranges, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), Resource Conservation and Recovery Act (RCRA) 8 Metals, and phthalates).

2. Based on data presented in the SCD and associated reports, Catch Basin CB-44 solids was last sampled in November 2009 before the February 2010 cleanout. As noted in XPA Addendum 4, silty sand and gravel have re-accumulated in catch basin CB-44 since 2010. EPA recommends resampling Catch Basin CB-44 solids to determine whether the catch basin continues to be a potential source of contamination to the Outfall 19 and the Willamette River. Analysis of this sediment would provide additional information on whether contaminants are being transported from the Willbridge Yard to CB-44.

3. Analysis of the stormwater sample collected from catch basin CB-44 detected carcinogenic PAHs at concentrations exceeding JSCS SLVs and RAO 3 PRGs. These data suggest that catch basin CB-44 is a potential source of contamination to the Willamette River.

4. The SCD concludes that due to the limited historical releases that have occurred at the site, the minimal volume of stormwater conveyed, the relatively low concentrations of contaminants measured in shallow soil and catch basins and the lack of appreciable groundwater contributions to stormwater conveyances, additional source control measures at the site are not warranted. However, EPA recommends implementation of best management practices at the site to minimize the potential for the discharge of contamination to the Willamette River through the stormwater pathway. This recommendation is consistent with ODEQ stormwater guidance that states, stormwater source control determinations are in part based on a demonstration that "Adequate measures are in place to ensure source control and good stormwater management measures occur in the future (DEQ 2010)." Given the elevated concentrations of carcinogenic PAHs detected in catch basin CB-44, regular cleanout and maintenance of catch basins at the site should be conducted at a minimum. In addition, although stormwater is no longer discharged under a 1200Z industrial stormwater permit, EPA recommends ongoing monitoring to confirm the effectiveness of BMPs.

To Be Considered

1. The conclusions that groundwater is not impacted at the Willbridge Yard and that contaminant migrations via groundwater infiltration into the stormwater pipes is not occurring is based on information presented in XPA Addendums 1-3. EPA has not reviewed these documents and cannot comment on the groundwater pathway at the Willbridge Yard until these documents have been reviewed. However, as noted in the SCD, due to the distance of the site from the river, the lack of releases at the site and the results of the stormwater investigation, EPA agrees that the likelihood of the groundwater pathway being a source of contamination to the Willamette River is low.

2. Flow Rates: The method for obtaining flow rates and accuracy of the measurements should be clarified. Table 1 (XPA Addendum 4) includes a column for flow rates with flow velocities listed with accuracy in the tenths of feet/second; however, the section entitled *Storm Event Preparation and Sampling* states that "high flow volumes prevented accurate measurement." The flow velocities listed in Table 1 provide little meaningful information without quantifying actual discharge rates and the accuracy of the measurement.

Matters of Style

1. One line of evidence used to indicate that Willbridge Yard is not a contamination source is the similar contaminant concentrations in stormwater upstream and downstream from Willbridge Yard. A figure or table that summarizes the data used to arrive at this conclusion should be provided.

2. The presentation of analytical results should include laboratory detection limits, as stated in section D.7.1.1 of the JSCS. These should be provided in Table 2 to enable a comparison of detection limits to JSCS SLVs and the PRGs.

EPA Site Status Summary – BNSF Willbridge Rail Yard

Question	Answer	Description
Are source control measures (SCMs) being implemented?	No	ODEQ concludes that the property does not appear to be a current or reasonably likely source of contamination to the Willamette River. As a result, no SCMs were implemented at the site.
Are there JSCS SLV exceedances?	Yes	Lead, benzo(g,h,i)perylene, indeno(1,2,3-cd)pyrene, and pyrene were detected in catch basin solids (CB-44) above JSCS SLVs. cPAHs exceed the RAO 9 PRG. Total and dissolved arsenic, total and dissolved lead, total silver and bis(2-ethylhexyl)phthalate were detected in stormwater above JSCS SLVs. Polycyclic Aromatic Hydrocarbons (PAHs): stormwater samples SW09 and SW13. Bis(2-ethylhexyl) phthalate: stormwater sample SW04.
Are there stormwater PRG exceedances?	NA	Total and dissolved arsenic, and bis(2-ethylhexyl) phthalate were detected in stormwater above RAO 3 PRGs.
Are pollutant concentrations typical of Portland Harbor industrial sites (e.g. below the knee of the curve)?	Yes	All pollutant concentrations presented are at or below the knee of the curve. Note: charts only presented for analytes with JSCS SLV exceedances.
Are stormwater COCs from this site the same as those defined for the associated SDU?	No	Stormwater from the site discharges to City OF-19, which discharges to Portland Harbor sediment decision unit (SDU) RM9W. SDU RM9W has the following focused constituents of concern (COCs): total PCBs, PeCCD, and TCDD. Total PCBs are not stormwater COCs at the Willbridge Yard. Stormwater samples from the Willbridge Yard were not analyzed for PeCCD, TCDD, or other dioxins; therefore, it is unknown whether these are COCs.
Do sampled stormwater events meet JSCS criteria?	No	Stormwater sampling was not conducted in accordance with ODEQ guidance See Primary Comment #2.
Is further stormwater data collection recommended?	Yes	Additional stormwater sampling is required to comply with ODEQ guidance and confirm through ongoing monitoring that the site is not a source of contamination to the Willamette River.

Question	Answer	Description
Are additional SCMs recommended?	To be determined	Contingent upon results of additional stormwater quality data collected in accordance with ODEQ guidance.